AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A process for producing metal oxide from a metal compound ~~compounds, in particular metal hydroxide or metal carbonate,~~ in which the metal compound is conveyed into a reactor with fluidized bed, heated there to a temperature of 650 to 1150°C by combustion of fuel, and metal oxide is generated, ~~wherein~~ comprising introducing a first gas or gas mixture ~~is introduced~~ from below through a gas supply tube into a mixing chamber of the reactor located above the orifice region of the gas supply tube, the gas supply tube being at least partly surrounded by a stationary annular fluidized bed which is fluidized by supplying fluidizing gas, wherein the gas flowing through the gas supply tube entrains solids from the fluidized bed into the mixing chamber when passing though the upper orifice region of the gas supply tube, and ~~that~~ adjusting the gas velocities of the first gas or gas mixture as well as of the fluidizing gas for the annular fluidized bed ~~are adjusted~~ such that the Particle-Froude numbers in the gas supply tube lie between 1 and 100, in the annular fluidized bed between 0.02 and 2, and in the mixing chamber between 0.3 and 30.

2. (previously presented) The process as claimed in claim 1, wherein the Particle-Froude number in the gas supply tube lies between 1.15 and 20.

3. (previously presented) The process as claimed in claim 1 wherein the Particle-Froude number in the annular fluidized bed lies between 0.115 and 1.15.

4. (previously presented) The process as claimed in claim 1, wherein the Particle-Froude number in the mixing chamber lies between 0.37 and 3.7.

5. (currently amended) The process as claimed in claim 1, wherein the filling level of solids in the reactor is adjusted such that the annular fluidized bed extends beyond the upper orifice region ~~end~~ of the gas supply tube and ~~that~~ wherein solids are ~~constantly~~ introduced into the first gas or gas mixture ~~and entrained by the gas stream to the mixing chamber located above the orifice region of the gas supply tube~~.

6. (currently amended) The process as claimed in claim 1, wherein ~~as starting material~~ the metal compound is aluminum hydroxide with a grain size of less than 100 µm ~~is supplied~~.

7. (previously presented) The process as claimed in claim 1, wherein preheated gas containing oxygen is supplied to the reactor through the gas supply tube.

8. (currently amended) The process as claimed in claim 1, wherein gaseous and/or liquid fuel is introduced into the reactor through the gas supply tube~~, the fuel preferably being supplied in the vicinity of the outlet opening of the gas supply tube~~.

9. (previously presented) The process as claimed in claim 1, wherein gaseous fuel and/or air is introduced into the lower region of the annular fluidized bed of the reactor.

10. (previously presented) The process as claimed in claim 1, wherein the pressure in the reactor lies between 0.8 and 10 bar.

11. (currently amended) The process as claimed in claim 1, wherein ~~before the heat treatment~~ the solids are suspended, dried, preheated and/or partly calcined prior to the heating treatment in at least one preheating stage, wherein the preheating stage comprises ~~comprising~~ a heat exchanger and a downstream separator~~, the solids are suspended, dried, preheated and/or partly calcined~~.

12. (currently amended) The process as claimed in claim 11, wherein the heat exchanger is an annular-fluidized-bed heat exchanger ~~with~~ comprising a second stationary fluidized bed and a second mixing chamber ~~is used as heat exchanger~~.

13. (currently amended) The process as claimed in claim 1, ~~wherein~~ further comprising cooling the reactor ~~and/or an annular-fluidized-bed heat exchanger is effected~~ by injecting water into the annular fluidized bed.

14. (currently amended) The process as claimed in claim 11, wherein after the heat treatment 0 to 100 % of the product entrained by the exhaust gas of the reactor ~~are~~ is discharged via a separator into a preferably fluidizing-gas-operated mixing vessel, and a product mixture is generated with partly calcined solids.

15. (currently amended) The process as claimed in claim 1, wherein the product or product mixture is supplied to a cooling system ~~which in particular consists of an arrangement of~~ comprising a plurality of cooling stages connected in series.

16. (previously presented) The process as claimed in claim 15, wherein the gas heated in the cooling stage is supplied to an upstream cooling stage, a preheating stage and/or the reactor.

17. (currently amended) A plant for producing metal oxide from metal compounds~~,~~ ~~such as metal hydroxide or metal carbonate, in particular for performing a process as claimed in, claim 1~~ comprising a fluidized bed reactor ~~constituting a fluidized-bed reactor,~~ in which the metal compound is heated by combustion of fuel and metal oxide is generated, wherein the reactor ~~has~~ comprises at least one gas supply tube at least partly surrounded by an annular chamber in which a stationary annular fluidized bed is located, and a mixing chamber located above the orifice region of the gas supply tube, ~~a gas supply system which is formed such that~~ wherein the gas flowing through the gas supply tube ~~system~~ entrains solids from ~~a~~ the stationary annular fluidized bed~~, which at least partly surrounds the gas supply system,~~ into the mixing chamber when passing through the upper orifice region of the gas supply tube.

18. (currently amended) The plant as claimed in claim 17, wherein the ~~gas supply system has a~~ gas supply tube ~~which in the lower region of the reactor~~ extends substantially vertically upwards from the lower region of the reactor into the mixing chamber of the reactor~~, the gas supply tube being surrounded by a chamber which at least partly annularly extends around the gas supply tube and in which the stationary annular fluidized bed is formed~~.

19. (currently amended) The plant as claimed in claim 17 ~~18~~, wherein the gas supply tube is arranged approximately centrally, based on the cross-sectional area of the reactor.

20. (currently amended) The plant as claimed in claim 17, ~~wherein~~ further comprising a solids separator ~~for separating solids is provided~~ downstream of the reactor, ~~and that~~ wherein the solids separator ~~has~~ comprises a solids return conduit leading to the annular fluidized bed of the reactor and a solids conduit leading to a mixing vessel.

21. (currently amended) The plant as claimed in claim 17, ~~wherein~~ further comprising in the annular chamber of the reactor a gas distributor ~~is provided,~~ which divides the annular chamber into an upper annular fluidized bed and a lower gas distributor chamber, ~~and that~~ wherein the gas distributor chamber is connected with a supply conduit for fluidizing gas.

22. (currently amended) The plant as claimed in claim 17, wherein the reactor ~~has~~ further comprises a supply conduit for gaseous and/or liquid fuel[[,]] which leads to the gas supply tube ~~system~~, and/or a supply conduit for gaseous, liquid and/or solid fuel[[,]] which leads to the annular chamber.

23. (currently amended) The plant as claimed in claim 22, wherein in the ~~gas supply system, in particular in the~~ gas supply tube, a lance is arranged for supplying gaseous and/or liquid fuel, which lance extends into the region of the outlet opening of the ~~gas supply system, in particular the~~ gas supply tube.

24. (currently amended) The plant as claimed in claim 17, ~~wherein that~~ further comprising a preheating stage comprising an annular-fluidized-bed heating stage with a chamber for a stationary annular fluidized bed and a mixing chamber ~~is provided as preheating stage~~.

25. (currently amended) The plant as claimed in claim 17, ~~wherein~~ further comprising downstream of the reactor a preferably fluidizing-gas-operated mixing vessel ~~is provided~~ for mixing the product with partly calcined solids to obtain a product mixture.

26. (currently amended) The plant as claimed in claim 17, ~~wherein that~~ further comprising a cooling system for the product or product mixture ~~has~~ comprising a fluidized-bed cooler with at least one vertical weir, before which the product or product mixture forms a fluidized bed.

27. (new) The process as claimed in claim 1, wherein the metal compound comprises metal hydroxide or metal carbonate.

28. (new) The process as claimed in claim 12, further comprising cooling the annular-fluidized-bed heat exchanger by injecting water into the annular fluidized bed.